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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/069,585	06/28/2002	Fumitoshi Yamashita	2002-0214A	3828

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EXAMINER

ELKASSABGI, HEBBA

ART UNIT PAPER NUMBER

2834

DATE MAILED: 02/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/069,585

Applicant(s)

YAMASHITA ET AL.

Examiner

Heba Elkassabgi

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 29 October 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 9-11 is/are rejected.
- 7) ☒ Claim(s) 7 and 8 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Specification***

The amendment to the specification is acknowledged by the Examiner and the objection in the previous office action is withdrawn in light of the amendment of the specification.

### ***Claim Rejections - 35 USC § 112***

The 35 USC § 112, second paragraph rejection of claims 1-9 is withdrawn in light of applicant's amendment of the claim language.

### ***Claim Objections***

Claim 1 is objected to the term "arc-shaped permanent magnetic" in line 4, is not understood this is believed to be an error in grammar and as amended in claim #9 the correct term is to be - - arc -shaped permanent magnet - -. For purpose of Examination, the term arc -shaped permanent magnet will be used in the office action.

Claim 2 is objected to for the term "another", the Examiner would recommend that the term - - second arc-shaped permanent magnet - -.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1,5,9,10-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Nippon Minimotor (assignee) (JP 1020126).

Nippon Minimotor discloses in figures 1-2, and 5-8 a permanent magnet small DC motor (10) having a frame (54) and an arc-shaped permanent magnet (12) fixed in the frame (54). An outer surface of the arc-shaped permanent magnet (12) at ends of the arc-shaped permanent magnet (12) in a thrust direction fit along an inner surface of the frame (54). Middle regions (14) of the outer surface of the arc-shaped permanent magnet (12) at ends of the arc-shaped permanent magnet (12) in a circumferential direction and between the outer surface at ends in the thrust direction are recessed with respect to the outer surface of the ends in the thrust direction.

In regards to claim 5, Nippon Minimotor discloses in figure 5 clearances (10) that are formed between the middle regions (14) of the arc-shaped permanent magnet (12) and frame (54).

In regards to claims 10 and 11, Nippon Minimotor discloses in figure 5 the middle regions (14) are planar.

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

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the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 2 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nippon Minimotor (assignee) (JP 1020126) as applied to claim 1 above, and further in view of Yamada (JP 06243377).

Nippon Minimotor (assignee) discloses a curvature of the middle regions (14) of the arc-shaped permanent magnets (12) is different from the outer surface of the ends (12b) of the arc-shaped permanent magnets (12) in the thrust direction so that the frame (54) does not function as a back yoke at the middle regions (14), except for the springs.

Yamada discloses in figure 1 an arc-shaped permanent magnet (2) and another arc-shaped permanent magnet (3) are a pair of arc-shaped permanent magnets (2/3) and a pair of springs (4/5). The pair of arc-shaped permanent magnets (2/3) are disposed to oppose each other in a frame (1) with the outer surface at the ends (21-22,31-32) in the thrust direction fitting along the inner surface of the frame (1). The arc-shaped permanent magnets (2/3) are fixed at the ends in the circumferential direction using the springs (4/5).

Since Nippon Minimotor and Yamada are from the same field of the endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to combine the structure of Nippon Minimotor with the springs to hold the magnets in order to provide long life to the motor with low consumption as taught by Yamada.

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3. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nippon Minimotor (assignee) (JP 1020126) and Yamada (JP 06243377) as applied to claim 2 above, and further in view of Blume (US Patent 6707361).

Nippon Minimotor and Yamada discloses the claimed structure, except for the permanent magnets being melt-spun and a binder.

Blume discloses in column 1, paragraph 1-3 that permanent magnets can be made of molded rare earth iron based melt spun flakes and a binder in order to have a high flexibility and high magnetic particle loading. Additionally, reference of Dickens Jr, (US Patent 5173206) with the combination of NPL document submitted by applicant of Herbst et al. *Rare Earth Iron Boron Materials: A New Era in Permanent Magnets* teach the material choice of the magnets.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to combine the structure of Nippon Minimotor with the springs to hold the magnets in order to provide long life to the motor with low consumption as taught by Yamada and the permanent magnets of Blume in order to have a high flexibility and high magnetic particle loading.

4. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nippon Minimotor (assignee) (JP 1020126) and Yamada (JP 06243377) as applied to claim 2 above, and further in view of Sakata (JP 06236807).

Nippon Minimotor (assignee) (JP 1020126) and Yamada (JP 06243377) disclose the claimed structure of the motor except for the magnets being of 1 mm thickness.

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Sakata teaches an arc shaped magnet to have a thickness of 0.1mm or larger and to be less than 1.0mm, in which the dimensional accuracy provides a good means for manufacturing.

Since Nippon Minimotor, Yamada, and Sakata are from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the other.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to provide springs to hold the magnets in order to provide long life to the motor with low consumption as taught by Yamada.

#### ***Allowable Subject Matter***

5. Claim 7 and 8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

In regards to claim 7, the prior art does not disclose pair of arc shaped permanent magnets are fixed along the inner surface of the frame to oppose each other, in combination with the arc-shaped permanent magnets exhibit different demagnetization curves at least by unsaturated magnetization.

In regards to claim 8, the prior art does not disclose a pair of arc shaped permanent magnets that oppose each other and are fixed along the inner surface of the frame, in combination with each arc-shaped permanent magnets have a rate of demagnetization that increases along with a distance from a center of a magnetic pole

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towards the ends in the circumferential direction to which the rate of demagnetization is greatest between the middle regions and the frame.

### ***Response to Arguments***

Applicant's arguments with respect to claims 1-11 have been considered but are moot in view of the new grounds of rejection.

The Examiner would like to recommend to the Applicant to review the claim language for a clearer claim language.

### ***Conclusion***

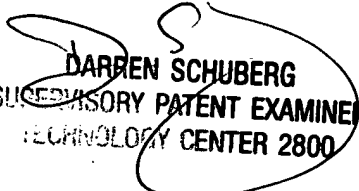
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Heba Elkassabgi whose telephone number is (571) 272-2023. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on (571) 272-2044. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Class 310- Electrical Generator/Motor Structure

  
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